

SWING

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Dear SONIC RS pilot

THANK YOU FOR CHOOSING A PARAKITE FROM SWING!

This Manual is an important part of your wing. It contains instructions, important advice on safety, care and maintenance, as well as tips on flying technique and general information about the sport.

Please read this document carefully before use!

We hope that you will enjoy many years of flying with your SONIC RS. Your Parakite stands out for its innovative design, first-rate materials and high-quality workmanship.

The lifespan of your Parakite depends largely on how you handle the material. If you follow the care instructions and treat your SONIC RS with care, you will enjoy it for a long time.

If you have any questions that are not answered in this Manual, please contact your SWING dealer or SWING directly. Our contact details are given in the Appendix.

We hope you have a great time with the SONIC RS.

Your SWING Team

This Parakite is equipped with SWING Ram Air Section Technology (RAST).

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INFORMATION

SWING Flugsportgeräte GmbH reserves the right to update and supplement the contents of this Manual at any time. You should therefore regularly visit:

www.SWING.de

There you will find further information about your Parakite and any updates to the Manual. For detailed information on how to use the SWING website, please refer to the section “SWING on the World Wide Web”

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WARNING

Read the Manual before use!

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01 Introduction

Manual

Read this Manual carefully before using the wing for the first time. It will familiarise you with the functions of the SONIC RS and help you to get the most out of it.
Information in this Manual on the design of the wing, technical data and illustrations is subject to change. The company reserves the right to make modifications at any time without prior notice. Special text is identified in accordance with ANSI Z535.6.
The Manual is divided into two main parts:

1. This Manual: It contains instructions on getting started and operating the wing.
2. The Maintenance and Service Book (available as a PDF download): It contains technical data and information on inspecting the wing.

QR codes

QR codes are included at various points in this Manual. They take you to the links given in the corresponding text.

Manual on the internet

On www.SWING.de you will find further information about your Parakite and any updates to the Manual.

This Manual reflects the status at the time of printing. Before it goes to print, this Manual is available for download on the SWING website.

Special text

DANGER

Sections of text headed “Danger” indicate an **imminently** hazardous situation in which **death or serious injury will** in all probability result if the instructions are not followed.

WARNING

Sections of text headed “Warning” indicate a potentially hazardous situation in which **death or serious injury may** result if the instructions are not followed.

CAUTION

Sections of text headed “Caution” indicate a potentially hazardous situation which may result in **minor or slight injury** if the instructions are not followed.

PLEASE NOTE

Sections of text headed “Please note” indicate possible **damage to property** which may occur if the instructions are not followed.

TIP

Sections of text headed “Tip” give advice or tips that make it easier to use the Parakite.

SWING Flugsportgeräte and the environment

Environmental protection, safety and quality are the core values of SWING Flugsportgeräte GmbH and they shape everything we do. We also believe that our customers share our environmental awareness.

Respect for nature and the environment

You can help to protect the environment by practising the sport in a way that spares nature and the landscape. Please keep to marked paths, do not leave any litter, avoid unnecessary noise and respect the sensitive biological balance of nature. Consideration for nature is especially important at the launch site. Smokers are asked not to leave any cigarette butts at the launch site.
Air sports are outdoor sports, so protecting and preserving our planet’s resources is very important.

Environmentally friendly recycling

SWING considers the entire life cycle of its Parakites, which ends with environmentally friendly recycling. The synthetic materials used in a Parakite must be disposed of properly. If you are unable to arrange environmentally friendly disposal, SWING will be happy to recycle the Parakite for you. Please send the Parakite with a short note to the address given in the Appendix.

02 Basic rules for use

Safety advice

- Read the Manual carefully before using the wing for the first time, and hand it over to any third party if you pass on or sell the wing.
- The only permitted launch method is accelerating on the ground with the canopy fully open until take-off (no cliff launches, D-bag launches or similar).
- Under no circumstances use the Parakite as a skydiving canopy or emergency parachute.
- Extreme caution is required when using the wing.
- This product may only be used by persons who are in good physical condition and have the appropriate experience and skills in air sports.
- Use is at your own risk. The manufacturer cannot be held liable for any personal injury or material damage arising in connection with the use of the SONIC RS. Any risk to third parties must be ruled out.
- Never modify the design of the SONIC RS, as this will invalidate any warranty claim and the operating approval.
- First familiarise yourself with your SONIC RS on a training slope.
- The legislation in force in the respective country for the use of this wing must be observed.
- We strongly recommend that you complete training (if you do not already hold a paragliding licence) and then receive a briefing on parakiting.
- The SONIC RS must not be used for aerobatics. The wing was not developed or tested for aerobatics. Aerobatics include all flight attitudes with a bank or pitch angle of more than 135 degrees about the lateral or longitudinal axis, as well as all flight attitudes involving a stall.
- Have your SONIC RS inspected regularly.

WARNING

Changes in flight behaviour caused by changes in trim can lead to accidents and serious injuries!

Never forget: your safety and well-being depend directly on the condition of your equipment!

You will find further safety advice at the relevant points in this Manual.

Personal responsibility

Before using the SONIC RS for the first time, you agree that you have read and understood the entire Manual of the SONIC RS, including all instructions and warnings contained in it.

You also agree to ensure that any other user (who takes over the product from you permanently or temporarily) has likewise read and understood the entire Manual, including all instructions and warnings, before using your SONIC RS.

Risk avoidance

The use of the SONIC RS and its components involves certain risks of bodily injury or death for the user of this product or for third parties.

By using the SONIC RS, you agree to assume and accept all known and unknown, probable and improbable risks of injury.

The risks associated with this sport can be reduced by carefully observing the warnings in this Manual.

The safety rules

The greatest risk in parakiting and speedflying is how easy it is. It tempts you to push dangers aside or to stop noticing them. Be careful when a sense of routine sets in.

1. Check the objective hazards!

Weather: Never fly in foehn, thunderstorms or a cold front! Even though your SONIC RS offers maximum safety, the dangers of extreme turbulence cannot be calculated.

2. Check your equipment!

Inspect your wing closely before every launch and only launch with undamaged equipment! Adapt your equipment to the conditions: when flying further away from the slope, we recommend carrying a reserve parachute.

3. Check yourself!

Never fly if you are feeling unwell, whether you are not physically fit or have worries on your mind. The mountains are not going anywhere: take a day off.

4. What if...? Make a “plan B”!

Do not make impulsive decisions. Take the time to analyse the situation. Always have a plan B ready (e.g. regarding your choice of route, emergency landing fields, etc.).

5. Alpine parakiting close to the ground = increased risk!

Remember: flying close to the ground with the SONIC RS (= speedflying) increases the potential risk many times over!

6. Have the courage to criticise!

Speak up if you feel that people are overestimating themselves. In return, be open to criticism, even if it is uncomfortable to admit mistakes.

7. Analyse your mistakes!

Analyse every near-miss as if it had been a real accident and draw the necessary lessons from it. Avoid repeating the dangerous situation.

No risk, no fun; no limit, no life.

Respect your limits and do not exceed them just because you are out with experienced friends. Have the courage to hold back!

WARNING

PARAKITING AND SPEEDFLYING ARE DANGEROUS!

Only careful risk management allows this sport to be practised with an acceptable residual risk.

Operating limits, exclusion of liability and warranty

Operating limits

The SONIC RS may only be operated within the operating limits.

These are exceeded if one or more of the following apply:

- use outside the permissible weight range
- use with a wet or iced canopy or lines, or in conditions that may cause this
- temperatures below -20°C or above 50°C
- turbulent weather conditions and wind speeds at launch higher than 2/3 of the wing's maximum achievable airspeed (depending on take-off weight)
- aerobatics / extreme flying or flight manoeuvres with bank angles of more than 135 degrees
- flight manoeuvres with loads below 0 g or above 4 g
- unapproved modifications to the canopy, lines or risers

WARNING

Compliance with the operating limits must be ensured throughout the entire flight.

Intended use

The SONIC RS was developed for parakiting and speedflying.

The SONIC RS may only be used for these purposes.

The only permitted launch method is accelerating on the ground with the canopy fully open until take-off (no cliff launches, D-bag launches or similar).

Exclusion of liability and waiver of claims

Use of the SONIC RS is at your own risk!

The manufacturer cannot be held liable for any personal injury or material damage arising in connection with SWING Parakites. Any modification (to the design, but also to the brake lines beyond the permissible tolerances) or improper repair of this Parakite, as well as missed inspections (annual and 2-yearly check), will invalidate the operating approval and the warranty.

Every pilot is responsible for their own safety and must ensure that the airworthiness of the Parakite is checked before every launch. A launch may only take place if the Parakite is airworthy. In addition, the pilot must comply with the regulations in force in the respective country.

SWING Flugsportgeräte GmbH expressly points out that SWING accepts no liability whatsoever for use of the wing!

By using the SONIC RS, you agree to the following:

- Waiver of all claims of any kind arising from the use of the SONIC RS and its components that you may wish to assert now or in the future against SWING Flugsportgeräte GmbH and all other contractual partners.
- Release of SWING Flugsportgeräte GmbH and all other contractual partners from any claims for liability, loss, damage, injury or expenses that may concern you, your next of kin and relatives or other users of your SONIC RS, insofar as they arise from the use or from the manufacture and processing of the SONIC RS and its components.

In the event of death or incapacity, all the provisions set out here take effect and are also binding on your heirs, next of kin and relatives, executors and administrators, legal successors and legal representatives.

SWING Flugsportgeräte GmbH and all other contractual partners have made no other oral or written representations and expressly deny having done so, except for what is set out in the Manual of the SONIC RS.

03 Technical Description

Manufacture of the SONIC RS

SWING manufactures the SONIC RS using state-of-the-art machinery and production techniques.

A thorough quality check is carried out after every production step. In addition, the complete Parakite undergoes a final individual inspection and measurement.

Technologies

The SONIC RS is a Parakite, and our development team has used the following technologies:

- RAST (Ram Air Section Technology): for maximum control, pitch stability and a solid feel in turbulent air.
- Nitinol wires: shape-memory alloy in the leading edge and in the top and bottom surfaces for maximum profile accuracy and very easy packing.
- Dimensionally stable canopy profile with 3D shaping: for a smooth surface and more performance.
- Sharknose: improves stability at high speeds.
- Hybrid risers: a combination of Dyneema line and webbing for the best overview and durability.
- Rigid handles: a combination of a classic brake loop and a padded handle bar for the most direct connection to your Parakite.
- Dirt outlets at the trailing edge: so that you can easily get rid of sand and dirt.

Type testing

SWING has tested the SONIC RS extensively and successfully for its suitability for the intended use.

In addition, an accredited test centre has demonstrated its strength in accordance with DIN EN 926-1:2016.

Please refer to the technical data for the permissible total weights in flight.

The SONIC RS does not meet the German LTF-HG/GS-2024 airworthiness requirements for hang gliders and paragliders. It is also not certified for powered flight (DGAC).

Please check the local regulations and laws in advance to find out whether, and at what heights, flying the SONIC RS is permitted in your area.

Technical data

SONIC RS D-lite	15	18	21	24
EN type test	926-1	926-1	926-1	926-1
Certified take-off weight (kg) min/max incl. equipment	50-119	55-119	60-119	70-119
Cells	52	52	52	52
Flat area (m^2)	15,0	18,0	21,0	24,0
Projected area (m^2)	12,5	15,0	17,5	20,0
Maximum chord (m)	2,0	2,1	2,3	2,4
Aspect ratio	5,5	5,6	5,75	5,85
Wing weight (kg)	3,5	3,8	4,2	4,6

Further technical data and material information can be found in the Maintenance and Service Book

04 Setting Up and Test Flying

Before the first flight

During production, the SONIC RS undergoes several quality checks and, at the end, a thorough individual inspection. This inspection is completed by the test flight, which must be carried out by a competent person, preferably your dealer. Ideally, this takes place in your presence, so that you can familiarise yourself with your equipment at the same time.

WARNING

Any modification or improper repair of this Parakite will invalidate the operating approval and the warranty.

Reserve parachute

Carrying a certified reserve parachute is recommended for emergencies involving a permanent failure of the Parakite, for example after a collision with another aircraft.

When choosing a reserve parachute, make sure that the intended take-off weight is within its limits. The reserve parachute must be fitted in accordance with the manufacturer's instructions.

Suitable harnesses

The SONIC RS is approved for use with harnesses of category **GH** (harnesses without rigid cross-bracing).

Whether you choose a light split-leg harness or a classic seated harness is up to you.

The SWING Brave 5 is a perfect match for the SONIC RS.

Important note on geometry:

Please note that the **suspension height** of your harness has a direct influence on flight behaviour. A higher or lower suspension point changes the leverage on the riser system. This can affect the effective brake travel, the feedback and the agility of your Parakite.

If you have any questions or doubts about using your harness with the SONIC RS, please contact your SWING dealer or SWING directly.

WARNING

Never use the SONIC RS with a reclined (pod) harness!

The SONIC RS can become extremely difficult or even impossible to control when combined with this type of harness!

Risers

The risers of your SONIC RS differ fundamentally from those of paragliders or speedwings.

The geometry is designed so that you control the angle of attack of your SONIC RS through the position of the brake handles. Below the neutral position, you also engage the brakes.

Work your way towards fully released brakes step by step. “Speed & Dive” increases strongly with the brakes released. Once you are familiar with the SONIC RS in the neutral brake position, it is essential to approach the full speed range slowly and step by step, as the glide angle drops sharply in the “dive”. Bear in mind that the sink rate in turns increases strongly as you release the brakes!

Brake positions

WARNING

Never let go of the brake handles in flight; always keep your hands in the loops.

Best glide

The SONIC RS achieves its best glide when you hold the brake handles in the neutral position. In this position, the magnets on the brake handle and riser are at the same height, and so are the quick links.

We recommend this position for flying in turbulent air and for soaring

Full speed

The SONIC RS reaches its maximum speed on the steepest flight path when you release the brakes completely until they are limited by the riser geometry. Keep a firm grip on the brake handles while doing so.

This position is not suitable for flying in turbulent air. In this position, the SONIC RS reacts extremely dynamically to disturbances.

Minimum speed

The SONIC RS reaches its minimum airspeed when you hold the brake handles at about the height of the suspension points. If you pull the brakes down further, you quickly approach the stall point, where the airflow over your SONIC RS separates.

This speed is suitable for thermal flying.

Never fly at this speed close to the ground, as you will have no energy left for a flare.

WARNING

The brakes may only be locked in the magnets in an emergency.

The magnets usually withstand the loads in steady flight, but they have not been tested for this and are at their load limit. Be prepared at all times for them to break away and for the wing to accelerate sharply (on one side).

Brake adjustment

The brakes of your SONIC RS are optimally adjusted for your SONIC RS ex works. Do not adjust the main brake line. The knot ladder is intended only for correcting the trim. This should only be done by a competent person.

Checking the riser geometry

The geometry of the risers has a major influence on the flight behaviour of your SONIC RS.

Check the correct geometry of your riser regularly.

With the brake loop attached and fixed in the magnet, all quick links must be at the same height (neutral position). If this is not the case, have the riser trimmed by a competent person before the next flight.

PLEASE NOTE

Check the correct geometry of your riser regularly. It has a major influence on the trim and the flight behaviour of your SONIC RS.

05 Operation

Take the safety rules above to heart!

Conduct at the flying site

First, some important rules that you must observe at the flying site:

- First clarify the local conditions, e.g. with the lift operator. Is flying Parakites permitted or prohibited, and which rules apply?
- Comply with the local regulations on minimum distances.
- Any risk to third parties must be ruled out at all times.

Please keep to these rules so that the pilots who come after you can also enjoy the site.

Preparation and laying out

First flight

We strongly recommend that you have an experienced instructor or SWING partner brief you on the particular characteristics of flying a Parakite. For your first attempts, use a flat training area for inflation practice and short “hops” to get a feel for the energy of the SONIC RS.

WARNING

Do not overestimate your abilities. Do not let your own overconfidence or that of other pilots tempt you into reckless behaviour.

Pre-flight check

Your safety starts on the ground. Give your equipment a thorough check before every launch. A close look is essential, especially after long days of flying or long periods of storage.

Checklist before launch:

- **Harness:** Are all seams intact? Is the reserve container firmly seated and is the deployment handle correctly secured? Are the karabiners working properly?
- **Connections:** Are the quick links screwed tight and secured? Are the risers undamaged?
- **Line routing:** Check the brake lines from the handle to the cascade. Are they free of twists and knots?
- **Lines:** Check all line levels from the risers to the canopy for damage.
- **Canopy:** Inspect the top and bottom surfaces for tears or abrasion.
- **Internal structure:** Are the ribs and V-ribs intact?

- **Condition:** Is the Parakite dry? (Moisture changes flight behaviour drastically!)

WARNING

If you find even the slightest damage or signs of wear: **Do not launch!** Contact your SWING dealer or SWING support immediately for clarification.

Laying out

Lay out the wing in an arc. The centre of the canopy should be the highest point on the ground ("rosette"). With this layout, the central A-lines are tensioned first when you pull up. Thanks to **RAST**, the wing then fills very harmoniously from the centre outwards, which ensures a stable rise without any tendency to veer off to one side.

- Make sure that there are no foreign objects in or on the wing.
- Sort the lines carefully. Because of its high dynamics, the SONIC RS does not forgive line snags.
- Release the brake handles from the magnet holders before the launch, to prevent them from catching during inflation.

Launch

Launch check

Immediately before launch, check the most important safety-relevant points, ideally always in the same order so that nothing is forgotten:

1. Do the terrain and the weather, in particular wind direction and strength, allow a safe flight?
2. Is your personal equipment (harness, karabiners, reserve parachute and helmet) correctly put on, are all loops closed and all buckles securely locked?
3. Is the wing laid out properly and are the risers free and untwisted?
4. Are the airspace and the launch area clear?

Forward launch

Unlike with a paraglider, you do **not hold the A-risers in your hands** for a forward launch with the SONIC RS.

1. Put your arms through the loops of the brake handles and take a firm grip of the handles.
2. Hold your arms out to the sides and slightly back so that the brakes run completely freely and exert no pull.
3. Run! The pull comes exclusively through the harness. The SONIC RS rises with the impulse from your body.
4. As soon as the canopy is above you: control check! Are the wingtips open? No line-overs?

- *Small collapses:* A short “pump” on the affected side is often enough.

5. **Decision:** Only when the wing is flying cleanly above you and you are sure do you “go”.
   - To take off: increase your running speed and release the brakes in a controlled way.
6. **Abort:** If something is not right, abort immediately! Pull the brakes all the way down. Never try to launch with a knot in the lines: the high speeds make this unpredictable.

Reverse launch (recommended)

1. Hold the A-risers above the connecting links. A moderate pull from the hips lets the SONIC RS rise cleanly.
   - Overshooting: thanks to the reflex profile, the SONIC RS tends to stay stable above the pilot. If it does surge forward in strong wind, you have two options:
     1. Let it go: the profile often stabilises itself (reflex effect).
     2. A short, crisp brake input stops the canopy. Avoid long, deep braking at the zenith, as the wing can otherwise lift you off your feet (lift effect).
   - Small collapses: a short “pump” on the affected side is often enough.
2. **Decision:** Only when the wing is flying cleanly above you and you are sure do you “go”.
   - To take off: increase your running speed and release the brakes in a controlled way.
3. **Abort:** If something is not right, abort immediately! Pull the brakes all the way down. Never try to launch with a knot in the lines: the high speeds make this unpredictable.

Take-off speed:

Do not pull the brakes too hard during the run-up. As a Parakite, the SONIC RS needs a higher take-off speed than a paraglider. Only once you have enough speed do you assist the take-off with a dynamic brake input.

TIP

A little brake at launch can prevent the reflex profile from “gripping” too early and stabilises the canopy. But be careful: too much brake, or even a knot, can make the SONIC RS unstable. Avoid launching in unfamiliar or difficult terrain until you can handle the wing blindfolded.

Flight behaviour and turns

The SONIC RS has very direct and dynamic handling.

Flat turns

Use mainly weight shift and only as much inside brake as necessary. This way you keep the best glide.

Steep turns / dives:

By shifting your weight and releasing the outside brake (hands up) while pulling on the inside, you put the SONIC RS into a dynamic turn with a high sink rate.

WARNING

CAUTION: RISK OF STALL:

When you fly slowly (close to the stall point), be extremely careful with the brake! To prevent a spin: if you notice that the control pressure on the inside drops away or the wing tips backwards, **release the inside brake immediately**, but keep the outside brake where it is ("support") to take the rotation out.

2D steering (wingtip control)

For advanced pilots, the SONIC RS offers the option of 2D steering.

- To initiate a turn without braking the whole trailing edge (which costs lift), you can pull the brake handle slightly inwards. This mainly controls the wingtip.
- For maximum glide in the turn: stretch your arm out (outside) and bring the handle towards your body on the inside.

Active flying

Active flying with the SONIC RS means: **always keep in contact with the wing.**

React to disturbances before they develop. In turbulent air, never let the brake handles go up completely (full speed).

- **Turbulence:** keep slight tension on the brakes ("working position") to keep the internal pressure up.
- **Feedback:** the brake pressure tells you what the canopy is doing. If the pressure drops (unloading), bring your hands down smoothly to increase the angle of attack.
- **Full speed:** only fly fully accelerated (hands all the way up) in calm air or with a sufficient safety margin from the ground.

WARNING

Do not react hectically. Braking too deeply and abruptly can cause a stall. In turbulent air the rule is: **always keep light tension on the brakes!** Never let go of the handles.

Landing

Thanks to its efficient profile, the SONIC RS has a high glide performance, which can lead to a very long landing run on flat ground.

Make sure you choose a sufficiently large landing field, especially when there is no headwind to slow your forward speed.

We recommend starting the final approach a little higher than in the “best glide” position. Approach with plenty of speed (hands up). This way you store enough energy in the wing to pull an effective “flare” just above the ground and make a soft landing.

Important: In completely calm conditions, you must be ready to run fast. Because of its higher wing loading and the reflex profile, the SONIC RS has a higher stall speed than a conventional paraglider.

Packing

Careful packing considerably extends the lifespan of your Parakite.

1. Preparation: first remove dirt, foreign objects or sharp objects. Make sure that your SONIC RS is completely dry.
2. Sorting: sort the lines before folding and lay the wing on your opened stuff sack (e.g. the SWING Sherpa or quick-pack bag).
3. Folding: start in the centre of the Parakite. Take hold of the second cell and lay cell on cell (“cell to cell”). Take great care that the Nitinol reinforcements of the leading edge lie neatly together and are not kinked.
4. Letting the air out: take hold of the trailing edge and repeat the process, folding every second cell together from the centre. Lay the folded cells on top of each other. Now gently smooth the remaining air out from the trailing edge towards the air intakes.
    - *Note on RAST:* because of the RAST wall, the air escapes from the rear section a little more slowly. Do not use force; give the air time to escape.
5. Finishing: repeat the process on the other half of the wing. Lay both sides on top of each other. If your stuff sack has internal clips or straps, close them starting at the trailing edge.

6. Closing: fold the stuff sack towards the leading edge. Close the zip carefully. Make absolutely sure that no fabric or lines get caught in the zip.

As the SONIC RS is fitted with highly flexible Nitinol wires, it keeps its shape very well. Even so, to extend its lifespan: do not pack your Parakite too firmly or compress it too tightly. Treat the leading edge gently despite its robustness and, if you are not using your SONIC RS for a long time (e.g. over the winter), ideally store it slightly open and loosely packed.

Descent techniques

Please check the local regulations and laws in advance to find out whether flying at high altitude with the SONIC RS is permitted in your area. If it is, you will find the most important rapid descent methods for your Parakite here. This Manual is no substitute for flight training: SWING strongly recommends taking part in a safety training course over water (SIV).

The following applies to all extreme flight manoeuvres:

- At first, only practise them under the supervision of a certified flying instructor or safety training instructor over water.
- Make sure that the airspace below you and around you is clear before you enter a manoeuvre.
- Never take your eyes off your Parakite during the entire manoeuvre.

Spiral dive

Due to its design, the SONIC RS tends towards a stable spiral dive and reaches above-average sink rates.

Entry:

You enter the spiral by slowly increasing the brake pressure on the inside of the turn while clearly shifting your weight in the same direction. Ideally, start this manoeuvre from an almost fully released brake position (“full speed”).

Dosing:

Do not pull the inside brake too abruptly or too far, to prevent the SONIC RS from stalling on one side (spin).

Behaviour:

The spiral begins as soon as the wing tips sharply to the side and dives into a steep turning path. You can control the bank angle and sink rate at any time by pulling a little more inside brake or releasing it slightly.

Recommendation:

We strongly recommend keeping the outside brake in the “full speed position” (hands all the way up) or close to it. This reduces the g-forces acting on you and the equipment while still achieving a high sink rate.

Forces:

For physical reasons, the pull on the brake line in the spiral is considerably higher than in normal flight.

Exit:

To avoid strong pendulum movements or a “climb” when leaving the spiral, release the inside brake slowly and in a controlled way while using the outside brake to support the wing.

WARNING

The spiral dive is extremely efficient for losing height. However, note the following:

The fast sink rates and the resulting g-forces put a high physical load on the body. This can quickly become too much for inexperienced pilots. Approach high sink rates step by step!

Tensing your abdominal and leg muscles during the spiral (anti-g straining manoeuvre) helps to keep the blood in your head.

Exit the spiral immediately if you feel dizzy, your field of vision narrows (tunnel vision) or you feel weak!

Make sure you have a sufficient safety height above the ground when you enter the manoeuvre.

IMPORTANT WITH HIGH SINK RATES:

To **exit a stable spiral dive** with a very high sink rate (> 14 m/s) **safely,** it may be necessary **to actively brake the outer half of the Parakite** and/or shift your weight to the outside of the turn. The exit can take several complete revolutions and cause a large loss of height. **For this reason, fly this manoeuvre never below 200 metres above the ground!** The exit must be fully completed by this height.

Rolling in the “full speed position”

The most efficient way to lose height with a Parakite without exposing yourself to extreme g-forces is a rolling movement (similar to a wingover).
You fly it mainly with weight shift while holding the brakes in the “full speed position” (hands up).

This increases the descent rate further compared with the normal sink at full speed. The “full speed position” allows you to lose height quickly. In general, descending is more efficient with Parakites than with normal paragliders.

When soaring, we simply recommend flying out of the lift band so that you can descend and land more easily.

TIP

Due to their design, classic rapid descent methods such as big ears or the B-stall are not possible or useful with the SONIC RS. To lose height, we therefore recommend flying circles, spiral dives or small wingovers (rolls).

DANGER

Flying full circles close to the ground while soaring is life-threatening.

06 Extreme flight manoeuvres / dangerous situations

In extreme conditions, only professional or very experienced pilots should fly the SONIC RS.

Asymmetric collapse

Although the SONIC RS is very stable thanks to RAST, it can collapse in strong turbulence.

In the “full speed position” (hands all the way up), every Parakite is more prone to collapses, which can then have more dynamic consequences. The natural turning movement towards the collapsed side can be minimised by applying measured counter-brake on the open side.

With large collapses, brake the open side carefully to avoid a stall on that side. If the collapse does not reopen despite counter-braking and weight shift, you can speed up reopening by repeatedly applying a deep brake input (pumping) on the collapsed side.

Symmetric front collapse

If you get a front collapse, there is a risk that the Parakite forms a “horseshoe” (the wingtips come forward). To prevent or correct this, pull both brake handles once, quickly, symmetrically and firmly. This is the fastest way to reopen your SONIC RS.

Cravat / line-over

In extremely turbulent air or as a result of pilot error, part of the wing can get caught in the lines.

1. First try to stabilise the wing and keep it on course by carefully counter-braking on the open side.
2. Without pilot input, the drag of the cravat can quickly put the wing into a stable spiral dive!
3. There are two ways to clear a cravat:
    - Empty or free the affected side by pumping deeply and firmly.
    - Induce a full stall (only for experts with sufficient height!).

WARNING

If these manoeuvres do not clear the cravat or you feel overwhelmed by the situation (high g-forces, disorientation, proximity to the ground), do not hesitate: throw your reserve parachute immediately!

Deep stall

A deep stall can occur after heavy use due to ageing, porous material (UV radiation) or due to moisture (rain). The Parakite then has no forward speed and

a high sink rate.
To avoid or exit a deep stall with the SONIC RS:

- Immediately bring the brakes into the “full speed position” (hands all the way up).
- If necessary, push the A-risers slightly forward.

WARNING

Warning: if the brakes are applied during a deep stall, the Parakite immediately goes into a full stall.

If a deep stall occurs close to the ground, do not actively exit it, because of the pendulum movement when the wing picks up speed again! Instead, the pilot should stay upright in the harness, prepare the legs for a parachute landing fall and expect a hard landing (as with a round parachute).

Spin

The SONIC RS goes into a spin when one side stalls. The wing then rotates about its own vertical axis. The inside of the wing flies backwards.

Causes:

- One brake is pulled too far and too hard (e.g. when entering a spiral dive aggressively).
- One brake is pulled too hard at too low an airspeed.

Reaction: If an unintentional spin is stopped immediately (brake fully released), the SONIC RS usually continues flying without losing much height.

Exit:

Release the brake that was pulled too far until the airflow reattaches on the inside.

WARNING

After a longer spin, the wing will surge forward dynamically on one side. This can lead to a large asymmetric collapse. Be ready to check this surge briefly.

Wingover

Alternating left and right turns allow the bank angle to be increased gradually. If wingovers are flown with a very high bank angle (more than 90°), the outer wingtip can lose pressure and unload. Do not increase the bank angle any further, as the wingtip could collapse suddenly.

PLEASE NOTE

Spins and wingovers beyond 90° count as aerobatic manoeuvres and must not be flown in Germany under normal conditions. Incorrect recovery or overreaction by the pilot can have dangerous consequences, regardless of the type of wing!

Full stall

WARNING

Because of the reflex design and the high dynamics of the SONIC RS, recovery from a full stall is critical and requires a lot of experience.

Entry:

You induce a full stall with the SONIC RS by pulling the brakes deep below the stall point (far beyond the “minimum speed position”).
It is crucial to initiate the full stall slowly and smoothly so that the wing does not fall too far back behind the pilot.

Holding:

If the SONIC RS is far behind you, do NOT release the brakes immediately! Keep them pulled down until the wing is above you or slightly in front of you again. This prevents the wing from surging forward extremely aggressively when it picks up speed again.

Exit:

If the wing surges forward, it is particularly important to stop this forward pitch with a short, firm and decisive pull on the brake handles.

Merely “braking lightly” or pulling too hesitantly is often not enough! Instead, it would accelerate the pitch even further, and a massive front collapse would be unavoidable. The right timing and dosing require a lot of experience.

07 Storage and Care

Temperature range

Extreme temperatures can affect the air density and therefore the flight behaviour of the Parakite. Be aware of this, especially at very low temperatures.

As a general rule, operating temperatures below -15°C should be avoided.

Advertising and stickers

Before applying advertising, make sure that the sticker to be applied does not change the flight characteristics. If in doubt, you should refrain from applying advertising.

PLEASE NOTE

Applying large, heavy or unsuitable stickers to the wing may invalidate the operating approval.

Storage

The ideal place to store your SONIC RS is a dry room, protected from light, with a constant temperature. If your equipment has become damp, always dry it in a heated, well-ventilated room so that the moisture can evaporate completely.

PLEASE NOTE

Never store your flying equipment in extreme heat (e.g. in a car in summer) or while wet or damp, as this can permanently damage the sailcloth and the coating.

Care

Handle with care

The lifespan of your Parakite depends largely on how you handle the material.

A Parakite that is well looked after can last twice as long as a neglected wing.

PLEASE NOTE

Never drag the wing over the ground. Pointed and sharp objects such as stones or branches can damage the sailcloth and the lines! Bear this in mind when choosing your launch site as well.

Tips on caring for the material

To preserve the value of your SONIC RS for a long time, note the following points:

- **UV radiation:** Do not leave your Parakite lying in the full sun unnecessarily when you are not using it. UV light is the greatest enemy of the fabric coating.
- **Ground:** Avoid dragging the wing over the ground (launch and landing site). Sharp stones or branches damage the material.
- **Packing:** Always fold the SONIC RS loosely. Pay particular attention to the **Nitinol wires** in the leading edge: do not bend them by force. Avoid compressing the stuff sack excessively.
- **Salt water:** If the wing comes into contact with salt water, rinse it thoroughly with fresh water. Then let it dry in the shade for long enough. Salt crystals act like sandpaper on lines and sailcloth.
- **Tree landing:** If you land in a tree, do not tug violently on the lines or the sailcloth to free the wing. Once all branches have been removed, the line lengths and the symmetry must be checked carefully.
- **Cleanliness:** When laying out, make sure that the lines do not lie in dirt. Small particles can work their way into the braid and destroy the line from the inside.
- **Risk of treading:** Never step on the lines, especially not on hard ground or rock. This can crush the fibres.
- **Foreign objects:** Make sure that no sand, snow or stones remain inside the Parakite. Weight at the trailing edge can adversely affect flight behaviour (risk of deep stall).
    - *Tip:* Use the **dirt outlets** at the stabilo/trailing edge to remove foreign objects. If dirt gets stuck, lift the wing by the C-lines so that the openings point downwards and the dirt can fall out.
- **Strong wind handling:** When launching in strong wind, the wing can slam hard onto the leading edge (“smacking down”). This can burst cells or seams. Check the wing regularly for such damage.
- **Nose-down:** After landing, do not let the Parakite smack straight down onto its nose (leading edge). This protects the profile reinforcements.

Dirt outlets

Cleaning

Any form of mechanical friction or abrasion accelerates the ageing of your Parakite. The high-quality PU-coated materials of the SONIC RS are naturally dirt-repellent. If cleaning is still necessary, use only a soft sponge or cloth with clean fresh water.

PLEASE NOTE

Never use soap, solvents, aggressive chemicals or detergents! Make sure that your SWING product is completely dry before you pack it away again.

Repairs

Larger repairs may only be carried out directly by SWING or by an authorised SWING service centre.

The exception is very small tears in the sailcloth (up to about 5 cm long) that are not directly on a seam. You can repair these temporarily with special ripstop sail repair tape.

Replacement lines for your SONIC RS can be obtained directly from your SWING dealer or via our website.

Line repairs

The line mix of the SONIC RS is designed for durability. Nevertheless, avoid extreme loads on individual lines. Overstretching is irreversible. Repeated kinking at the same point also weakens the breaking strength of the line.

Visible damage, even if it only affects the protective sheath, must be assessed and the line concerned replaced if necessary.

Procedure for replacing a line:

Before fitting a new line, always compare its length with the symmetrical line on the opposite side of the wing.

After every line replacement, a **ground handling check** is mandatory! Inflate the Parakite on the ground and check how it flies before you take off again.

WARNING

It is essential to observe the line maintenance intervals specified in the Maintenance and Service Book.

Improper handling and neglected maintenance intervals create a risk of line failure.

08 Repairs, Inspections and Warranty

Type designation

SWING Parakites have a detailed identification label on the centre rib.

For any questions to your SWING dealer or when ordering spare parts and accessories, it is helpful to be able to state the type designation and serial number of the Parakite so that it can be clearly identified.

Spare parts

As a general rule, only original spare parts may be used for maintenance and repair.

Spare parts such as lines, risers and the associated hardware, brake handles and self-adhesive repair material can be obtained either directly from SWING or from your SWING dealer.

Repair material, in particular for sewing work on the canopy, is available from SWING exclusively for SWING workshops.

Repairs

Small repairs to the wing

You can repair small tears in the wing with self-adhesive sailcloth, provided they are in areas under little load, not directly on seams and no larger than 5 centimetres.

Individual lines for your SONIC RS can be ordered directly at: info@swing.de.

Line groups must be replaced by a SWING workshop.

Check the trim of your SONIC RS after every line replacement.

SWING workshops

Always have maintenance and repair work carried out directly by SWING or by a contract workshop approved by SWING. SWING workshops have trained staff, original SWING spare parts and the necessary expertise – a guarantee of the highest quality.

Regular checks

Check the following components and materials at regular intervals, e.g. after a landing, for damage, wear and correct function:

- Risers with quick links
- Lines
- Sailcloth

Lines

Measuring the line lengths is part of the regular check. The lines must be loaded with five kilograms to ensure reproducible results for comparison with the lengths on the check sheet. The line lengths of the SONIC RS are given in the Maintenance and Service Book.

The lines have a major influence on flight behaviour. Changes in length, and the resulting changes in launch and flight behaviour, usually happen gradually and largely unnoticed. They usually first become apparent in extreme situations.

Environmental influences such as high temperatures or moisture can affect line lengths.

After a water landing or if the lines have become soaked, the line lengths must be checked.

WARNING

Changes in length, and the resulting changes in launch and flight behaviour, usually happen gradually and largely unnoticed. They usually first become apparent in extreme situations and can then have fatal consequences.

Check the line lengths at regular intervals.

A damaged line can lead to loss of control of the Parakite. Always replace damaged lines.

Only use original parts for replacement.

Never use knots to shorten the lines. Knots weaken the lines considerably and can cause them to break under high load.

Inspection

General

To ensure that your Parakite continues to offer the same high level of operational safety and reliability in the future, you should follow the SWING service programme in the Maintenance and Service Book.

Failure to observe the inspection intervals invalidates the warranty and the operating approval. A properly kept logbook recording all flying and training hours helps you to identify the deadlines in good time.

Detailed information on the inspection can be found in the two supplementary brochures “Inspection Information” and “Maintenance and Service Book”, both of which form part of this Manual.

Both brochures can be downloaded from the SWING website.

PLEASE NOTE

Read the Maintenance and Service Book and follow its provisions to keep the SWING warranty, the operating approval and your insurance cover valid.

Inspection intervals

After 100 operating hours or 24 months, whichever comes first, the SONIC RS must be checked in accordance with the Inspection Information. If damaged or worn parts need to be replaced, use only original parts from SWING Flugsportgeräte GmbH.

Shorter inspection interval UNDER HEAVY USE

If your SONIC RS is subjected to above-average stress (e.g. regular extreme flight manoeuvres, frequent flying at the coast in salty air or in sand), we strongly recommend shortening the inspection intervals or having an additional check carried out early.

Modifications to the wing:

Your SONIC RS was manufactured within very tight tolerances. These settings guarantee the optimum balance of performance and safety.

Unauthorised changes to the trim, the line lengths or the canopy are strictly prohibited.

PLEASE NOTE

Unapproved modifications immediately invalidate the operating approval and all liability claims against the manufacturer.

Authorisation to inspect

It is very important that you have your Parakite serviced at the prescribed intervals throughout its entire lifespan.

Observe the personnel requirements set out in the Inspection Information.

To benefit from your SWING warranty, you must

- have your Parakite checked by SWING or by an inspection centre authorised by SWING
- provide clearly identifiable documentation and results of the inspection from the authorised inspector (date and place / name of the inspector) and have them entered near the information label.

Inspection by the owner

If the owner carries out the inspection, the liability and warranty of SWING Flugsportgeräte GmbH become void.

09 SWING addresses

Addresses

SWING Flugsportgeräte GmbH

An der Leiten 4
82290 Landsberied
Germany
Phone: +49 (0) 8141 32778 - 88
Email: info@SWING.de
www.SWING.de

Address for wings sent for recycling

SWING Flugsportgeräte GmbH
- Recycling Service -
An der Leiten 4
82290 Landsberied
Germany

SWING website

SWING offers a comprehensive range of information on the World Wide Web about your SONIC RS and many other parakiting topics. The SWING website is the first port of call for the worldwide SWING community:

www.SWING.de

On the SWING website, in addition to further information and accessories for your SONIC RS, you will find a wide range of accessories for your Parakite and useful products for pilots.

You will also find all the links to our services and pages on the World Wide Web there:

- Service
- Accessories
- Facebook, Twitter & YouTube

This website and its contents are made available to you for your use. The contents of the SWING World Wide Web pages are provided in their current form and condition. SWING reserves the right to change the pages or block access to them at any time.

We wish you lots of fun with your SONIC RS!

Your
SWING Team

Appendix

Wing details

Model:	Size:	Colour:	Serial number:
SONIC RS			__/__/-__/__/__/__ - __/__/__/__/__/__

Test-flown on:	__/__/ - __/__/ 202__
Dealer stamp and signature:	_____

Pilot details / proof of ownership

Name:	
Address:	
Phone:	
Email:	

Inspections and repairs carried out

Date:	Work carried out:	Overall condition on delivery:	Carried out by (name):	Stamp, signature

Notes



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Rock solid flight
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